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7590 01/11/2008 Woodard, Emhardt, Moriarty, McNett & Henry LLP Bank One Center/Tower Suite 3700 111 Monument Circle Indianapolis, IN 46204-5137			EXAMINER CHOW, JEFFREY J	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/688,063	Applicant(s) WONG ET AL.	
	Examiner Jeffrey J. Chow	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>04/08/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27 – 30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Signal carrying device or the likes are non-statutory. A device carrying logic can be a form of one or more signals carried by a transmission medium as disclosed in the original specification (page 9, lines 2 – 4). Signal is a form of energy and is not a physical structure, does not perform any useful, concrete and tangible result and thus, does not fit within the definition of a machine. Therefore claims 27 – 30 are non-statutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 – 5, 21, 23, 24, 26, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutson (US 5,175,710).

Regarding independent claim 1, Hutson teaches a method, comprising processing a stream of data vectors (column 4, lines 14 – 23: the amplitude and bearing of the received signal to a grayscale format, or a “bearing time record” (BTR)), generating a visualization from a first

group of the data vectors (Figure 6: shows the output display of a BTR image 70), determining a set of values corresponding to one or more eigenvectors (column 5, lines 60 – 67: matrix analysis through the use of eigenvectors and eigenvalues apply to singular value decomposition, as singular values are the square root of eigenvalues and singular vectors are equivalent to eigenvectors; column 6, lines 7 - 21: the matrix can be decomposed using numerical math pertaining to singular values and singular vectors) for a matrix defined with the first group of the data vectors (column 6, lines 1 – 6: a matrix 72 provides a numerical representation of the BTR image for display), and projecting each member of a second group of the data vectors onto the visualization as a function of the set of values (column 6, lines 41 – 50: data is compressed by 82%, allowing data to be displayed).

Regarding dependent claim 3, Hutson teaches representing a number of images with the data vectors (column 1, lines 49 – 57: digital image can be formed from a variety of input data signals, including seismic, radar, radio, video and film).

Regarding dependent claim 4, Hutson teaches generating includes performing a multidimensional scaling routine with the first group of the data vectors (column 6, lines 27 – 40: singular vectors and/or singular values are used by the real-time multi-dimensional processing system as a filter to enhance and/or suppress features within the BTR data) to generate the visualization in the form of a scatter plot (Figure 8: display of time versus bearing in different frequency bands).

Regarding dependent claim 5, Hutson teaches projecting is performed in response to an increase in rate of receipt of the stream of the data vectors (column 15, lines 36 - 48: the data is displayed by a bearing-by-time display, which would be presented to an operator for a selected

D/E angle in a three-part display: the top portion 270 is updated at a fast rate, a middle portion 272 is averaged and updated at a slower rate, and a bottom portion 274 is averaged and updated at an even slower rate).

Regarding independent claim 21, Hutson teaches a method, comprising receiving a data stream (column 4, lines 14 – 23: the amplitude and bearing of the received signal to a grayscale format, or a “bearing time record” (BTR)), processing a stream of data vectors corresponding to the data stream (column 5, lines 60 – 67: matrix analysis through the use of eigenvectors and eigenvalues apply to singular value decomposition, as singular values are the square root of eigenvalues and singular vectors are equivalent to eigenvectors), visualizing at least a portion of the data stream by executing a multidimensional scaling routine with at least a corresponding portion of the data vectors (Figure 6: shows the output display of a BTR image 70), and performing at least one of vector sampling and vector dimension reduction on a group of the data vectors to provide a data set with a reduced number of data elements relative to the group of the data vectors (column 5, lines 60 – 67: matrix analysis through the use of eigenvectors and eigenvalues apply to singular value decomposition, as singular values are the square root of eigenvalues and singular vectors are equivalent to eigenvectors; column 6, lines 7 - 21: the matrix can be decomposed using numerical math pertaining to singular values and singular vectors; column 6, lines 41 – 50: data is compressed by 82%, allowing data to be displayed).

Regarding dependent claim 23, Hutson teaches the data stream includes at least one of a number of text documents and a number of images (column 1, lines 49 – 57: digital image can be formed from a variety of input data signals, including seismic, radar, radio, video and film).

Regarding dependent claim 24, Hutson teaches generating a visualization with the data set (Figure 6: shows the output display of a BTR image 70).

Regarding dependent claim 26, Hutson teaches updating a visualization provided by said visualizing with one or more additional data vectors as a function of one or more eigenvectors determined from the corresponding portion of the data vectors (column 5, lines 60 – 67: matrix analysis through the use of eigenvectors and eigenvalues apply to singular value decomposition, as singular values are the square root of eigenvalues and singular vectors are equivalent to eigenvectors; column 6, lines 7 - 21: the matrix can be decomposed using numerical math pertaining to singular values and singular vectors; column 6, lines 41 – 50: data is compressed by 82%, allowing data to be displayed).

Regarding independent claim 34, claim 34 is similar in scope as to claim 21, thus the rejection for claim 21 hereinabove is applicable to claim 34.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Aggarwal et al. (US 6,505,207).

Regarding dependent claim 6, Hutson did not expressly disclose projecting includes determining a dot product of each member of the second group of the data vectors and at least one of the one or more eigenvectors. Aggarwal discloses transform the data into new set of features by calculating the dot product between the vector representation and the eigenvector of the covariance matrix (column 5, line 62 – column 6, line 11). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hudson's system to take the dot product of the eigenvector and the new data in vector form. One would be motivated to do so because this would provide another method to reduce the number of data to be able to display on a graph.

Regarding independent claim 31, Hutson teaches a system, comprising a data communication subsystem operable to receive a data stream (column 4, lines 14 – 23: the amplitude and bearing of the received signal to a grayscale format, or a "bearing time record" (BTR)), a processing subsystem responsive to the data communication subsystem to generate a visualization output based on a group of data vectors corresponding to a first portion of the data stream (Figure 6: shows the output display of a BTR image 70), the processing subsystem being further responsive to a rate of receipt of the data stream to modify the visualization output (column 15, lines 36 - 48: the data is displayed by a bearing-by-time display, which would be

presented to an operator for a selected D/E angle in a three-part display: bottom portion 274 is averaged and updated at an even slower rate). Hutson did not expressly disclose one or more other data vectors corresponding to a second portion of the data stream as a function of eigenspace defined with the group of data vectors, and a display device responsive to the visualization output to provide a corresponding visualization. Aggarwal discloses transform the data into new set of features by calculating the dot product between the vector representation and the eigenvector of the covariance matrix (column 5, line 62 – column 6, line 11). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hudson's system to take the dot product of the eigenvector and the new data in vector form. One would be motivated to do so because this would provide another method to reduce the number of data to be able to display on a graph.

Regarding dependent claim 33, Hutson teaches the visualization output generated from the group of data vectors is provided in accordance with a multidimensional scaling routine executed by the data processing subsystem (column 6, lines 27 – 40: singular vectors and/or singular values are used by the real-time multi-dimensional processing system as a filter to enhance and/or suppress features within the BTR data).

Claims 7, 16, 17, 19, 20, 22, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Chakrabarti et al. (US 6,760,724).

Regarding dependent claim 7, Hutson did not expressly disclose generating a data set representative of a portion of the stream of the data vectors by performing at least one of sampling the portion of the stream of data vectors, and reducing dimension of each of a plurality

of the data vectors by wavelet decomposition. Chakrabarti discloses Haar wavelet decomposition (column 3, line 66 – column 4, line 13). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to incorporate Haar wavelet decomposition method for sampling input data and reducing the dimension of the input data with the Haar wavelet decomposition method. One would be motivated to do so because Haar wavelet decomposition method is conceptually simple and very fast to compute.

Regarding independent claim 16, Hutson teaches a method, comprising receiving a data stream (column 4, lines 14 – 23: the amplitude and bearing of the received signal to a grayscale format, or a "bearing time record" (BTR)), processing a group of data vectors corresponding to the data stream (Figure 6: shows the output display of a BTR image 70). Hutson did not expressly disclose generating a reduced data set which includes reducing dimension of the data vectors with wavelet decomposition, and providing a representation with the reduced data set corresponding to a visualization of a portion of the data stream, however Hutson discloses matrix analysis through the use of eigenvectors and eigenvalues apply to singular value decomposition, as singular values are the square root of eigenvalues and singular vectors are equivalent to eigenvectors (column 5, lines 60 – 67) and data is compressed by 82%, allowing data to be displayed (column 6, lines 41 – 50). Chakrabarti discloses Haar wavelet decomposition (column 3, line 66 – column 4, line 13). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to incorporate Haar wavelet decomposition method for sampling input data and reducing the dimension of the input data with the Haar wavelet decomposition method. One would be motivated to do so because Haar wavelet decomposition method is conceptually simple and very fast to compute.

Regarding dependent claim 17, Hutson teaches visualizing a part of the data stream in accordance with a multidimensional scaling routine (column 6, lines 27 – 40: singular vectors and/or singular values are used by the real-time multi-dimensional processing system as a filter to enhance and/or suppress features within the BTR data).

Regarding dependent claim 19, Hutson teaches the data stream corresponds to at least one of a number of text documents and a number of images (column 1, lines 49 – 57: digital image can be formed from a variety of input data signals, including seismic, radar, radio, video and film).

Regarding dependent claim 20, Hutson did not expressly disclose generating includes performing the wavelet decomposition with Haar wavelets. Chakrabarti discloses Haar wavelet decomposition (column 3, line 66 – column 4, line 13). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to incorporate Haar wavelet decomposition method for sampling input data and reducing the dimension of the input data with the Haar wavelet decomposition method. One would be motivated to do so because Haar wavelet decomposition method is conceptually simple and very fast to compute.

Regarding dependent claim 22, Hutson did not expressly disclose the dimension reduction routine includes wavelet decomposition. Chakrabarti discloses Haar wavelet decomposition (column 3, line 66 – column 4, line 13). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to incorporate Haar wavelet decomposition method for sampling input data and reducing the dimension of the input data with the Haar wavelet decomposition method. One would be motivated to do so because Haar wavelet decomposition method is conceptually simple and very fast to compute.

Regarding independent claim 35, claim 35 is similar in scope as to claim 16, thus the rejection for claim 16 hereinabove is applicable to claim 35.

Claims 2 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Deerwester et al. ("Indexing by Latent Semantic Analysis).

Regarding dependent claim 2, Hutson did not expressly disclose representing a number of text documents with the data vectors. Deerwester discloses indexing and retrieval documents (abstract). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to take in document related inputs. One would be motivated to do so because this would improve the detection of relevant documents on the basis of terms found in queries.

Regarding dependent claim 18, Hutson did not expressly disclose performing a similarity analysis with the representation. Deerwester discloses indexing and retrieval documents (abstract) and a document matrix that contain the frequency of which a term occurs in a document (pg, 10: Table 2). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to take in document related inputs and to utilize a document matrix to obtain a frequency certain terms occur in a document. One would be motivated to do so because this would improve the detection of relevant documents on the basis of terms found in queries

Claims 8 – 10, 13, 15, 27, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Schkilnik et al. (US 2003/0152069) and Aggarwal et al. (US 6,505,207).

Regarding independent claim 8, Hutson teaches a method, comprising receiving a first portion of a data stream at or below a defined rate (column 4, lines 14 – 23: the amplitude and bearing of the received signal to a grayscale format, or a “bearing time record” (BTR)), generating a first visualization from a group of data vectors corresponding to the first portion (Figure 6: shows the output display of a BTR image 70). Hutson did not expressly disclose receiving a second portion of the data stream above the defined rate. Schkilnik discloses receiving a plurality of data streams at a first speed and combines the plurality of data streams into one or more data streams with a second, higher speed (paragraph 17). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson’s system to additionally accommodate receiving a plurality of data streams at faster rate than the normal speed while receiving data at two different rates. One would be motivated to do so is to efficiently process data and utilize a processor at any given time. Hutson did not expressly disclose generating a second visualization by updating the first visualization with one or more additional data vectors as a function of an eigenspace defined with the group of data vectors, the one or more additional data vectors corresponding to the second portion of the data stream. Aggarwal discloses transform the data into new set of features by calculating the dot product between the vector representation and the eigenvector of the covariance matrix (column 5, line 62 – column 6, line 11). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hudson’s system to take the dot product of the eigenvector and

the new data in vector form. One would be motivated to do so because this would provide another method to reduce the number of data to be able to display on a graph.

Regarding dependent claim 9, Hutson did not expressly disclose generating includes determining a dot product between each of the one or more additional data vectors and one or more eigenvectors corresponding to the eigenspace. Aggarwal discloses transform the data into new set of features by calculating the dot product between the vector representation and the eigenvector of the covariance matrix (column 5, line 62 – column 6, line 11). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hudson's system to take the dot product of the eigenvector and the new data in vector form. One would be motivated to do so because this would provide another method to reduce the number of data to be able to display on a graph.

Regarding dependent claim 10, Hutson teaches providing a reduced data set by performing at least one of a dimension reduction routine and a sampling routine with a number of data vectors (column 5, lines 60 – 67: matrix analysis through the use of eigenvectors and eigenvalues apply to singular value decomposition, as singular values are the square root of eigenvalues and singular vectors are equivalent to eigenvectors; column 6, lines 7 - 21: the matrix can be decomposed using numerical math pertaining to singular values and singular vectors; column 6, lines 41 – 50: data is compressed by 82%, allowing data to be displayed).

Regarding dependent claim 13, Hutson did not expressly disclose providing a third visualization based on the reduced data set, however Hutson discloses compressing data, allowing it to be displayed (column 6, lines 41 – 50). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hutson's system by applying the

compression method on the already compressed data to achieve a better compressed data and it could be used to achieve the predictable result of having a further compressed data that represents the overall picture of the original data.

Regarding dependent claim 15, Hutson teaches the first visualization (Figure 6: shows the output display of a BTR image 70) and the second visualization each corresponding to a different scatter plot (column 5, lines 60 – 67: matrix analysis through the use of eigenvectors and eigenvalues apply to singular value decomposition, as singular values are the square root of eigenvalues and singular vectors are equivalent to eigenvectors; column 6, lines 7 - 21: the matrix can be decomposed using numerical math pertaining to singular values and singular vectors; column 6, lines 41 – 50: data is compressed by 82%, allowing data to be displayed).

Regarding independent claim 27, Hutson teaches an apparatus, comprising a device carrying logic executable by a processing subsystem receiving a data stream to generate a visualization from a group of data vectors corresponding to a first portion of the data stream received at a first rate (column 4, lines 14 – 23: the amplitude and bearing of the received signal to a grayscale format, or a “bearing time record” (BTR)). Hutson did not expressly disclose update the visualization as a function of one or more eigenvectors for the group of data vectors and one or more other data vectors corresponding to a second portion of the data stream received at a second rate greater than the first rate. Aggarwal discloses transform the data into new set of features by calculating the dot product between the vector representation and the eigenvector of the covariance matrix (column 5, line 62 – column 6, line 11). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hudson’s system to take the dot product of the eigenvector and the new data in vector form. One would be motivated to do

so because this would provide another method to reduce the number of data to be able to display on a graph. Schkilnik discloses receiving a plurality of data streams at a first speed and combines the plurality of data streams into one or more data streams with a second, higher speed (paragraph 17). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to additionally accommodate receiving a plurality of data streams at faster rate than the normal speed while receiving data at two different rates. One would be motivated to do so is to efficiently process data and utilize a processor at any given time.

Regarding dependent claim 29, Hutson teaches the device includes a computer accessible disk (column 1, lines 48 - 54: use of data storage).

Regarding dependent claim 30, Hutson teaches the device includes one or more components of a computer network (column 1, lines 48 - 54: use of data storage).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Schkilnik et al. (US 2003/0152069) and Aggarwal et al. (US 6,505,207) and Agraftotis et al. (US 2003/0195897).

Regarding dependent claim 11, Hutson did not expressly disclose determining error of the second visualization with the reduced data set. Agraftotis discloses a process of figuring out how similar the mapping of points from higher-dimensional space to a lower-dimensional space by using sum-of-squares error function (paragraph 81). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to incorporate sum-of-squares error function to determine the similarity of two graphs. One would be

motivated to do so because this provides a check of how accurate two graphs are to prevent the display of misinformation if the two graphs are not similar to each other after compressing the data of the original graph.

Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Schkilnik et al. (US 2003/0152069) and Aggarwal et al. (US 6,505,207) and Deerwester et al. ("Indexing by Latent Semantic Analysis).

Regarding dependent claim 12, Hutson does not expressly disclose determining includes performing a procrustes similarity analysis. Deerwester discloses indexing and retrieval documents (abstract) and a document matrix that contain the frequency of which a term occurs in a document (pg, 10: Table 2). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to take in document related inputs and to utilize a document matrix to obtain a frequency certain terms occur in a document. One would be motivated to do so because this would improve the detection of relevant documents on the basis of terms found in queries

Regarding dependent claim 14, Hutson does not expressly disclose the data stream corresponds to at least one of a number of text documents and a plurality of images. Deerwester discloses indexing and retrieval documents (abstract). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to take in document related inputs. One would be motivated to do so because this would improve the detection of relevant documents on the basis of terms found in queries.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Chakrabarti et al. (US 6,760,724) and Deerwester et al. ("Indexing by Latent Semantic Analysis).

Regarding dependent claim 25, Hutson did not expressly disclose a similarity analysis with the data set. Deerwester discloses indexing and retrieval documents (abstract) and a document matrix that contain the frequency of which a term occurs in a document (pg, 10: Table 2). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to take in document related inputs and to utilize a document matrix to obtain a frequency certain terms occur in a document. One would be motivated to do so because this would improve the detection of relevant documents on the basis of terms found in queries

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Schkilnik et al. (US 2003/0152069) and Aggarwal et al. (US 6,505,207) and Chakrabarti et al. (US 6,760,724).

Regarding dependent claim 28, Hutson did not expressly disclose the logic is further operable to reduce dimension of another group of data vectors in accordance with a wavelet decomposition routine. Chakrabarti discloses Haar wavelet decomposition (column 3, line 66 – column 4, line 13). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to incorporate Haar wavelet decomposition method for sampling input data and reducing the dimension of the input data with the Haar wavelet

decomposition method. One would be motivated to do so because Haar wavelet decomposition method is conceptually simple and very fast to compute.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hutson (US 5,175,710) in view of Aggarwal et al. (US 6,505,207) and Chakrabarti et al. (US 6,760,724).

Regarding dependent claim 32, Hutson did not expressly disclose the data processing subsystem is further operable to generate a reduced data set from the data stream with at least one of wavelet decomposition and vector sampling. Chakrabarti discloses Haar wavelet decomposition (column 3, line 66 – column 4, line 13). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Hutson's system to incorporate Haar wavelet decomposition method for sampling input data and reducing the dimension of the input data with the Haar wavelet decomposition method. One would be motivated to do so because Haar wavelet decomposition method is conceptually simple and very fast to compute.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey J. Chow whose telephone number is (571)-272-8078. The examiner can normally be reached on Monday - Friday 10:00AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER